

REMARKS

Applicants' attorney thanks the Examiner for her comments. Independent Claims 1 and 41 have been amended to include the limitations of former Claim 2, by requiring a single-layer absorbent structure. Independent Claims 1, 17, 30 and 41-43 have been amended to indicate that the fluid intake rate is measured using the Fluid Intake Rate Test (described in the specification). Claims 1 and 20 have been amended to recite a thickness range of about 1 to about 10 millimeters. Claims 7 and 18 have been amended to recite a subtended angle of about 30 degrees to about 180 degrees. Claims 2 and 4-6 have been canceled.

a) Claim Rejections Based On 35 U.S.C. §112

The rejection of Claims 1-15 and 20 under 35 U.S.C. §112, first paragraph, is respectfully traversed in view of the foregoing amendment. Claims 1 and 20 have been amended to recite a thickness range of "about 1 to about 10 millimeters." Applicants agree that the absorbent structure cannot have zero thickness.

The rejection of Claims 1-15, 17-22 and 24-43 under 35 U.S.C. §112, first paragraph, is respectfully traversed. Applicants disagree with the Examiner's statement that the specification enables a fluid intake rate of only "up to" 5 cubic centimeters per second. The specification plainly indicates a fluid intake rate of "about 0.5 cubic centimeters or greater" (p. 2, lines 19-20).

Applicants disagree with the Examiner's statement that the claims are not enabled because the specification does not enable an infinite fluid intake rate. Whether or not claims are enabled is judged from the viewpoint of reasonable persons having ordinary skill in the art. Such reasonable persons would not interpret Applicants' specification and claims as encompassing infinite fluid intake rates. Infinite fluid intake rates would require collisions between fluid and the absorbent structure occurring at infinite velocity. It is known from physics that objects having significant mass (e.g., fluids and absorbent structures) cannot travel through space at infinite velocity or, if they can, such velocity has never been observed or proven.

In summary, the Examiner's rejection assumes a principle of physics that has not been proven and is not known to exist. In order to clarify the independent claims, every independent claim has been amended to indicate that the fluid intake

rate is “measured using the fluid Intake Rate Test” set forth in the specification. This means that the upper limit of fluid intake rate covered by the claims inherently corresponds to the upper limit that can be determined using this test. This rejection should be withdrawn.

The rejection of Claims 7 and 18 under 35 U.S.C. §112, first paragraph, is respectfully traversed. The Examiner states that the specification only enables a subtended angle of 120-180 degrees. Yet Fig. 5 illustrates a subtended angle of 30 degrees. Claims 7-18 have been amended to recite a range of about 30-180 degrees, and this rejection should be withdrawn. Applicants agree that a subtended angle of zero is outside the invention, because there would be no curvature.

The rejection of Claims 8 and 19 under 35 U.S.C. §112, first paragraph, is respectfully traversed. The Examiner erroneously stated that the specification only enables a radius of curvature between 13-38 centimeters. The passage on page 14, lines 1-3 explicitly supports a radius of curvature of 38 cm or less, or 25 cm or less, or 13 cm or less. A reasonable person of ordinary skill in the art would understand that a range between about 0-38 centimeters is included. A radius of curvature approaching zero (though unlikely) is possible if the absorbent structure folds completely over itself. This rejection should be withdrawn.

b) Claim Rejection Based On Gertzman et al.

The rejection of Claims 1-8, 10-15, 41 and 43 under 35 U.S.C. §102(b) as anticipated by, or under 35 U.S.C. §103(a) as obvious over U.S. Patent 5,460,621 (Gertzman et al.) is respectfully traversed.

Gertzman et al. discloses a two-layer absorbent sponge in which both layers are formed of polyvinyl acetal having different densities. The reference does not disclose a single-layer absorbent structure as recited in independent Claims 1 and 41. The reference does not disclose a two-layer structure in which only one layer is elastomeric as recited in independent Claim 43. Accordingly, this rejection should be withdrawn.

In the Office Action, the Examiner equates a two-layer structure whose layers are joined together with a single-layer structure. This is not what is meant by the phrase “single-layer absorbent structure” in Claim 1. A single-layer absorbent

structure has only one absorbent layer, and does not have two absorbent layers joined together.

c) Claim Rejection Based On Olsen et al.

The rejection of Claims 1-8, 10, 12-15 and 41 under 35 U.S.C. §102(b) as anticipated by, or under 35 U.S.C. §103(a) as obvious over U.S. Patent 5,591,150 (Olsen et al.) is respectfully traversed.

Independent Claims 1 and 41 require a single-layer absorbent structure. As stated by the Examiner, one absorbent structure disclosed in Olsen et al. (defined by a combination of absorbent core 22 and resilient insert 44) has more than one layer. The Examiner cites an alternative embodiment in which the resilient insert 44 serves as the absorbent core (Col. 12, lines 9-26 and Col. 18, lines 7-11). Yet the disclosed insert does not anticipate or render obvious any of Applicants' claims because the disclosed insert does not curve when wet, due to expansion of one surface relative to another.

The resilient insert disclosed in Olsen et al. may either be pre-formed as a curved insert, or it may assume a curved shape during use (Col. 3, lines 6-23). When the insert curves during use, the curvature results from the pressure and motion imparted by a wearer's body (Col. 9, lines 55-67). The Examiner attempts to equate this curvature with the curvature of Applicants' absorbent structure, which results from expansion of one surface relative to another when the structure becomes wet. In so doing, the Examiner improperly ignores important claim limitations. Clearly, any resilient member will flex and bend under pressure. Olsen et al. has nothing to do with Applicants' claimed invention.

Accordingly, this claim rejection based on Olsen et al. should be withdrawn.

d) Additional Claim Rejections Based On Gertzman et al.

The rejection of Claims 9, 17-20, 22, 24-25, 28-29 and 42 under 35 U.S.C. §103(a) as obvious over Gertzman et al. is respectfully traversed.

Claim 9 depends from Claim 1 and is patentable over Gertzman et al. for at least the same reasons, explained above.

Independent Claim 17 recites an absorbent structure comprising a first layer that expands less than 10% in the presence of a liquid and a second layer that

expands at least 20% in the presence of the liquid, the second layer bonded to the first layer and having a basis weight of about 100 to about 1000 grams/m². Gertzman et al. plainly does not disclose this type of structure. In the absorbent structure of Gertzman et al., all layers are formed of the same polymer, which is polyvinyl acetal (Col. 4, lines 47-52).

Polyvinyl acetal is a highly water-absorptive material having the capacity to absorb up to 25 times its weight in fluids (Col. 4, lines 16-24). The sponges are intended to conform (through expansion) to the precise shape of an internal cavity or site required for organ protection during surgery, or to displace and move organs and tissue without damaging them (Col. 4, lines 25-28). Because the different layers have different pore sizes and densities, one may expand more than the other to cause curling. Yet both layers expand substantially more than 10%, and neither layer expands more than double the amount of the other, as would be required to read on Applicants' Claim 17.

Fig. 1 of Gertzman et al. illustrates the sponge material in the dry state. Fig. 2 illustrates the same material in the wet, expanded state. Comparison of Figs. 1 and 2 suggests that both layers expand substantially more than 10%, and neither layer expands more than double the amount of the other. Accordingly, Claim 17 is patentable. Claims 18-20, 22, 24-25 and 28-29 depend from Claim 17, and are patentable for at least the same reasons.

Independent Claim 42 also recites an absorbent structure comprising a first layer that expands less than 10% and a second layer that expands at least 20% in the presence of a liquid. Claim 42 is patentable for at least the same reasons as Claim 17. The claim rejection based on Gertzman et al. should be withdrawn.

e) Additional Claim Rejection Based On Olsen et al.

The rejection of Claims 9, 17-20, 22, 24-36, 38-40 and 42 under 35 U.S.C. §103(a) as obvious over Olsen et al. is respectfully traversed.

Claim 9 depends from Claim 1 and is patentable over Olsen et al. for at least the same reasons, explained above.

Independent Claim 17 recites an absorbent structure including a first layer that expands less than 10% in the presence of a liquid and a second layer that expands at least 20% in the presence of the liquid, so that the second layer increases

concavity along an interface between the first and second layers. Olsen et al. does not disclose these limitations. As explained above, the described concavity of the resilient member in Olsen et al. either a) occurs during manufacture of the resilient member, or b) results from flexing and bending the resilient member during use of the absorbent article. This has nothing to do with concavity along an interface that would result from expanding the second layer relative to the first layer in the presence of a liquid.

In the embodiments relied upon by the Examiner (Fig. 4 of Olsen et al.), the insert 44 is separated from absorbent core 42 at all locations depicting a concave surface, and there is no interface at these locations. Furthermore, it does not appear that one layer has expanded less than 10% while another layer has expanded at least 20% (more than double the amount of the first layer). Accordingly, Claim 17 is patentable over Olsen et al. Claims 18-20, 22 and 24-29 depend from Claim 17 and are patentable for at least the same reasons.

Independent Claim 30 is directed to an absorbent article including a bodyside liner, an outer cover and an absorbent structure between them. The absorbent structure includes a first surface, and a second opposing surface bonded to the outer cover. The absorbent structure expands along the second surface in the presence of a liquid so that the first surface increases concavity.

As explained above, Olsen et al. does not disclose an absorbent structure where surfaces expand differently in the presence of a liquid. Furthermore, in the embodiment relied on by the Examiner (Fig. 4 of Olsen et al.), the first surface (element 42) is longer than the second surface (element 44) and the first surface is convex, not concave. The second surface faces the outer cover, and the structure cannot be inverted to reverse the geometry. Claim 30 is therefore patentable over Olsen et al. Claims 31-37 and 39-40 depend from Claim 30, and are patentable for at least the same reasons.

Independent Claim 42 recites an absorbent structure comprising a first layer that expands less than 10%, and a second layer that expands at least 20% in the presence of a liquid. Claim 42 is patentable over Olsen et al. for the same reasons as Claim 17, explained above.

Serial No.: 10/820,636

Docket No.: KC-17,872

In summary, no claim is obvious over Olsen et al. This rejection should be withdrawn.

f) Conclusion

Applicants believe that the claims, as presented, are in condition for allowance. If the Examiner detects any unresolved issues, then Applicants' attorney requests a telephone call from the Examiner, and a telephone interview.

Respectfully submitted,



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